LABORATORY DATA

Nine patients (3.5%) had less than 10 gm. % hemoglobin; 130 patients (52%) had mild to moderate decrease of hemoglobin concentration, and 117 patients (45%) had normal levels of hemoglobin. The white blood count was more than 10,000 per mm.^{3} in 57 patients (21.8%); the highest count was 16,400; 14 patients (5.3%) had counts of less than 5,000 per mm.^{3}; the lowest count was 3,200; 190 patients (72.8%) had normal white cell counts. The erythrocyte sedimentation rate was normal in 46 (18%) and abnormally elevated in 209 patients (81.9%); the highest level was 54 mm. in one hour. The C-reactive protein was determined in 26 patients; it was positive in 23 (88.4%) and negative in three patients. The total serum protein level was normal in all 35 patients in whom it was determined. The levels of the albumin and globulin fractions were determined in 34 patients. The level of albumin was normal in 32 and below normal in two patients; the globulin fraction was normal in 25 and abnormally elevated in nine patients; the highest level of globulin was 4.9 gm.%. The albumin-globulin ratio was reversed in seven patients (table 2).

RADIOGRAPHIC CHANGES

It is generally known that the subjective manifestations of rheumatoid spondylitis may make their appearance long before definite evidences of the disease are seen in the radiograms of the sacro-iliac joints and/or of the spine. This interval may vary from a few months to a few years. A still greater difficulty is the recognition and correct interpretation of the early radiographic changes caused by the disease in the sacro-iliac joints, and particularly in the small diarthroidal joints of the vertebral column, namely, the apophyseal, the costovertebral and costrotransverse articulations. The differentiation of these minor changes from the normally occurring variations in the size, shape and direction of the articular facets is extremely difficult. We have obtained considerable help from inclined views of the sacro-iliac joints taken with the x-ray tube tilted at an angle of approximately 35°, and oblique views of the lumbar and cervical spines. The inclined views of the sacro-iliac joints render clearer visualization of their margins and joint spaces, so that minor changes could be differentiated more readily from the normally occurring variations.

All patients had radiographic evidence of involvement of the sacro-iliac joints. These changes were varied: narrowing or widening of the joint spaces, irregular and indistinct joint margins, at times serrated edges, partial or complete obliteration of the joint spaces, spotty osteoporosis and irregular sclerosis of the adjacent sacrum and/or ilium. Similar abnormalities were noted in the apophyseal joints of the lumbar spine and the cervical spine. Adequate or correct recognition of such changes in the dorsal spine was rarely possible because of interference by overlapping rib shadows. Calcification of spinal ligaments was recognized in 89 patients (33.3%). The degree and extent of calcification also varied markedly; in some, it was present only in two or three isolated areas of the spine irregularly spaced; in others, it involved all the ligaments, produced the characteristic "bamboo effect," and transformed the entire spine into a rigid column. The hip joints were involved in 41 patients (15.3%); the abnormalities consisted of varying degrees of narrowing of the joint spaces, erosions of the cortices of the head of the femur and acetabulum, spotty osteoporosis, and irregular areas of sclerosis in the head of the femur and acetabulum.

In a few patients the margins of the symphysis pubis showed considerable irregularity and spotty osteoporosis of the adjacent bones. Irregularities of the lower margins of the ischia, spotty sclerosis and osteoporosis of the adjacent bones were also occasionally present. Osteoporosis of the entire spine was noted in 64 patients (23.9%).

TABLE 4.—RESPONSE TO THERAPY

	Number of patients	Response				Percent good or excellent
		None	Fair	Good	Excellent	
Physiotherapy	95	4	21	52	18	73.7
Radiation:						
1 course	116	13	17	57	29	[1] 74.1
2 courses	42	1	8	23	10	[1] 78.5
3 courses	7	0	1	3	3	[1] 85.7
Total	260	18	47	135	60	75.0

[1] Mean, 75.5 percent.